North Bay Village, FL

APPROVED
SEP 2 3 2026
By _____

Budget Adjustment Register

Adjustment Detail

Packet: GLPKT34991 - BA0000648 WO#8 ARDURRAADD'L SERVICES

Adjustment Number	Budget Code	Description	Adjustment Date
BA0000648	Budget 2025-2026	BA0000648 WO#8 ARDURRA GROUP ADD'L SERVICES	9/22/2026

Summary Description:

Account Number	Account Name	Adjustment Description	Before	Adjustment	After
430-30-533-3110	Engineering & Plannning	BA0000648 WO#8 ARDURRA GROUP ADD'L SE	565,894.00	48,352.00	614,246.00
September: 48,352.00					
430-37-534-4601	Repair & Maintenance Vehicle	BA0000648 WO#8 ARDURRA GROUP ADD'L SE	150,000.00	-48,352.00	101,648.00
September: -48,352.00					

Budget Code Summary

Budget	Budget Description	Account	Account Description	Before	Adjustment	After
2025-2026	Budget 2025-2026	430-30-533-3110	Engineering & Plannning	565,894.00	48,352.00	614,246.00
		430-37-534-4601	Repair & Maintenance Vehicle	150,000.00	-48,352.00	101,648.00
			2025-2026 Total:	**715,894.00**	**0.00**	**715,894.00**
			Grand Total:	**715,894.00**	**0.00**	**715,894.00**

Fund Summary

Fund	Before	Adjustment	After
Budget Code:2025-2026 - Budget 2025-2026 Fiscal: 2025-2026			
430	715,894.00	0.00	715,894.00
Budget Code 2025-2026 Total:	**715,894.00**	**0.00**	**715,894.00**
Grand Total:	**715,894.00**	**0.00**	**715,894.00**

Fund	Date
Utility Fund	9/22/2026
Fund(s) to be changed: Utility Fund	

GL Account	GL Line Item	Transfer to:	Transfer From:
430-30-533-3110	Engineering & Planning	$ 48,352	
430-37-534-4601	Repair & Maintenance Vehicle		$ 48,352
TOTAL (Columns must be equal)		$ 48,352	$ 48,352

Description:

AMENDMENT NO. 1 TO WORK ORDER NO. 08 WITH ARDURRA GROUP, INC. FOR THE WATER AND SEWER MASTER PLAN FOR ADDITIONAL SERVICES IN THE AMOUNT OF $89,150.00, FOR A TOTAL AMOUNT NOT TO EXCEED $591,784.00; AMENDING THE BUDGET FOR FISCAL YEAR 2025-2026
Line-Item Number: 430-30-533-3110 Engineering & Planning
Current Account Balance: $40,798.00
Amount To Be Encumbered: $89,150.00
Difference of $48,352 will be funded via a budget adjustment from account 430-37-534-4601 Repair & Maintenance Vehicle

WORK ORDER No. 08

Dated this 23 day of January, 2026

NORTH BAY VILLAGE PUBLIC WORKS DEPARTMENT

WATER AND SEWER MASTER PLAN (WSMP)

Rev 01

PROFESSIONAL SERVICES

This Work Order between North Bay Village, a Florida municipal corporation ("VILLAGE"), and Ardurra Group, Inc. (Ardurra), a full service engineering firm authorized to transact business in Florida ("CONSULTANT"), is made pursuant to the RFQ 2023-005 Consultant Service Agreement (the "Agreement") dated May 1, 2024 and expiring on May 1, 2029.

PROJECT DESCRIPTION

The VILLAGE is located within the northeast section of Miami-Dade County, Florida. It consists of three (3) islands surrounded by Biscayne Bay. With approximately 8,200 residents living in 0.83 square miles, the VILLAGE is primarily residential with a mixture of commercial, industrial and educational facilities. The VILLAGE maintains and operates the water supplied to the islands by Miami-Dade County Water and Sewer Department (WASD) and owns and operates approximately 8 miles of Water Distribution Mains and 605 Wholesale Water Meters. Additionally, the VILLAGE also owns and operates a wastewater collection and conveyances system that consists of approximately 30,000 LF of gravity sewer mains, 143 manholes and four (4) pump stations/basins

The community includes a mix of residential, commercial, industrial, and institutional properties and faces increasing redevelopment pressure, climate change risks, aging infrastructure, and evolving regulatory requirements.

The purpose of the WSMP is to proactively address these challenges and guide long-term investments. This Master Plan will serve as a 25-year utility roadmap to evaluate the VILLAGE's water distribution and wastewater collection systems, focusing on condition, capacity, operational performance, public health protection, and system resiliency.

Phased Development to Support the Stormwater Master Plan

A critical component of the WSMP is its strategic alignment with the implementation of the VILLAGE's Stormwater Master Plan (SMP). Recognizing the interdependence of utility infrastructure projects and the need to minimize construction conflicts and disruptions, the WSMP will be developed and submitted in sequenced, phased deliverables.

These phased deliverables will be timed to directly support stormwater infrastructure upgrades, enabling the VILLAGE to make informed decisions about joint trenching, utility corridor coordination, and project timing. Each phase of the WSMP will focus on specific subareas or utility systems, allowing for targeted evaluations, prioritized recommendations, and synchronized capital planning in concert with the phased SMP rollout.

The coordination between the WSMP and SMP will be maintained throughout the planning process via joint milestone meetings, data sharing, and aligned modeling and risk assessments. This integrated approach will maximize cost-effectiveness, enhance community outreach efforts, and accelerate delivery of critical infrastructure improvements across all utility systems.

Purpose and Objectives

The WSMP is intended to:

- Provide a data-driven framework for evaluating system condition, capacity, and future demand
- Identify and prioritize water and sewer improvements to support redevelopment, fire protection, and resilience
- Incorporate SCADA and AMI data analytics & improvement recommendations to enhance operational decision-making
- Address regulatory requirements from the Florida Department of Environmental Protection (FDEP), Environmental Protection Agency (EPA), Miami Dade County (MDWASD and RER-DERM).
- Support flood risk mitigation, saltwater intrusion defense, and inflow/infiltration reduction
- Develop a phased Capital Improvement Plan (CIP) with planning-level cost estimates
- Identify grant funding opportunities and implementation strategies
- Align with sustainability and sea-level rise adaptation goals
- Synchronize water and sewer improvements with stormwater construction activities

The WSMP will serve as a vital planning and decision-support tool, enabling the VILLAGE to advance resilient, cost-effective, and community-conscious utility upgrades through a phased, coordinated implementation strategy.

At the request of the VILLAGE, the CONSULTANT is pleased to submit this proposal to assist with the WSMP.

A revision (Rev 01) has been made to this Work Order per the VILLAGE's request. Rev 01 includes assisting the VILLAGE with preparing a Water and Sewer Rate Study. In addition, CONSULTANT will provide on-going support services as it relates to the FDOT project 449007-2-32-01. On-going services shall be performed within a Time and Material NTE (not-to-exceed) task.

The Work Order has been divided into the following tasks:

Task	Description
1	Project Management and Coordination Meetings
1.1	Coordination Meetings and QAQC – Water and Sewer Rate Study (Rev 01)
2	Existing Conditions and Baseline Analysis
3	Water System Assessment
4	Sewer System Assessment
5	Future Growth, Regulatory, Environmental, and Resiliency Planning
6	Capital Improvement Plan (CIP)
7	Operation and Maintenance (O&M) Recommendations
8	Implementation, Phasing, and Final WSMP Deliverables
9	Water and Sewer Rate Study (Rev 01)
10	Review of FDOT Design Submittals (Time & Materials, NTE) (Rev 01)

GENERAL REQUIREMENTS

Design Standards

The CONSULTANT shall be solely responsible for determining the standards the work shall meet and obtain all the requisite regulatory approvals. The design shall include, but is not limited to, the plans and specifications, which describe all systems, elements, details, components, materials, equipment, and any other information necessary for construction. The design shall be accurate, coordinated between disciplines, and in all respects, adequate for construction, and shall be in conformity, and compliance, with all applicable laws, codes, permits, and regulations.

Quality Control

The CONSULTANT is responsible for the quality control (QC) of their work and of its sub-consultants. The CONSULTANT shall provide to the VILLAGE the list of sub-consultants which shall be used for this project. This list shall not be changed without prior approval of the VILLAGE. All sub-consultant documents and submittals shall be submitted directly to the CONSULTANT for their independent QC review. The VILLAGE shall only accept submittals for review and action from the CONSULTANT.

The CONSULTANT shall be responsible for the professional quality, technical accuracy, and coordination of all pre-design services, designs, drawings, specifications, and other services furnished by the CONSULTANT and their sub-consultant(s). It is the CONSULTANT's responsibility to independently and continually QC their plans, specifications, reports, electronic files, progress payment applications, schedules, and all project deliverables required by this task order. The CONSULTANT shall provide the VILLAGE with a marked up set of plans and/or specifications showing the CONSULTANT's QC review. Such mark-ups shall accompany the CONSULTANT's scheduled deliverables. The submittal shall include the names of the CONSULTANT's staff that performed the QC review for each component (structures, roadway, drainage, etc.).

Project Schedule

The CONSULTANT shall submit a preliminary project schedule as an exhibit to this Work Order. The schedule shall be prepared in Microsoft Project and shall include the Consultant's best estimate as to the project start date.

Within 10 business days after receiving the Notice to Proceed and prior to beginning work, the CONSULTANT shall submit a final project schedule to the VILLAGE for approval. No work shall commence without an approved schedule. The final schedule shall include design, permitting activities, submittal review timeframes, and other project activities as required to complete the work. The CONSULTANT shall submit updated project schedules as required in the specific scope of services.

Permitting

The CONSULTANT shall coordinate with the VILLAGE, regulatory agencies, and any other government entity having an interest or jurisdiction, which may require permits for this project. The CONSULTANT shall provide an estimate of fees and duration associated with the permitting process. Some of the regulatory or permitting agencies associated with this project may include, but are not limited to:

- South Florida Water Management District (SFWMD)
- U.S. Army Corps of Engineers (USACE)
- U.S. Coast Guard (USCG)
- Miami Dade County Department of Regulatory & Economic Resources (RER)
- North Bay Village Building Permit
- Florida Department of Health Miami Dade County

SPECIFIC SCOPE OF SERVICES

The Scope of Services to be provided by the CONSULTANT shall be as follows:

Task 1 – Project Management and Coordination Meetings

The CONSULTANT will provide project management services including stakeholder engagement, interagency collaboration, schedule tracking, and integration with the ongoing Stormwater Master Plan.

The WSMP will be delivered through a phased and sequenced approach, aligned with the implementation timeline of the Stormwater Master Plan. As such, a robust structure of coordination and communication will be established to maintain transparency, streamline decision-making, and facilitate alignment across planning, engineering, and public engagement functions.

Meeting Type	Purpose / Description	Planned Number of Meetings
Project Kickoff Meeting	Initiate the project; review scope, schedule, data needs, roles, and communication protocol.	**1**
Interdepartmental Coordination Meetings	Coordination with VILLAGE departments including Public Works, Building Department, Planning & Zoning, Finance, Grants & Funding, and Public Outreach, as needed, to gather data, validate findings, and align priorities. Additionally, coordination with SWMP team for phasing alignment.	**6**
Meetings with Miami-Dade WASD	Review interconnect capacity, regional system requirements, flow allocations, regulatory considerations, and coordination on future improvements & service plans.	**Up to 2**
Stakeholder Workshop	Present preliminary findings, water/sewer system needs, and early recommendations to internal/external stakeholders; gather input for refinement.	**1**
Community Engagement Meeting	Engage residents and community groups; present project purpose, findings, and proposed improvements; gather public feedback and address questions.	**1**

Presentation to VILLAGE Commission	Present the Draft and/or Final Water & Sewer Master Plan; request Commission feedback and direction for adoption.	1
	Total	**12**

Deliverables:

- Monthly Progress Reports (Twelve (12) total)
- Meeting agendas and minutes (One (1) kick-off meeting and three (3) coordination meetings)
- Draft and Final Project Workshop Presentation
- Meeting agendas and sign-in sheets
- Presentation slides and summary notes for each meeting
- Meeting minutes with action items and follow-ups
- Integrated schedule showing alignment with the Stormwater Master Plan

Task 1.1 – Coordination Meetings and QAQC – Water and Sewer Rate Study (Rev 01)

The CONSULTANT shall attend coordination meetings (as scheduled by the CONSULTANT) with the VILLAGE in order to discuss ongoing efforts related to the Rate Study. It is anticipated that a total of up to (4) four meetings will be held over the duration of the Utility Rate Study (Task 9). Any additional meetings will be considered as an additional service to the VILLAGE. It is anticipated that the meetings will be taken virtually via teleconference. Meeting notes will be taken and distributed by the CONSULTANT.

Meetings and Coordination:

- Project Management and administration
- Coordination with VILLAGE Department, Specifically Finance and Utility Billing personnel
- Develop meeting agendas and/or meeting notes for the VILLAGE's use

Quality Assurance/Quality Control (QAQC):

- Internal review and QAQC of draft submittal documents associated with Rafetlis' (Subconsultants) Utility Rate Study (Task 9). The CONSULTANT will issue up to one (1) round of internal comments/markups on the submittal documents which include the draft technical memorandum & draft Power Point presentation.

Deliverables:

- Attend up to four (4) meetings and coordination with VILLAGE personnel
- Meeting agendas and notes (as applicable) for coordination/documenting meetings
- Quality Assurance/Quality Control

Task 2 – Existing Conditions and Baseline Analysis

The CONSULTANT will gather existing VILLAGE files and data through Request for Information (RFI), field verifications and limited condition assessments. After the RFI response from the VILLAGE and field assessments have been complete, the CONSULTANT will perform a baseline review and analysis of the present water and sewer system to create a baseline of existing conditions and determine potential deficiencies. All existing records will be reviewed within this task.

Task 2 includes the following subtasks:

2.1 – Data Collection & Analysis

The CONSULTANT will prepare a Request for Information (RFI) to the VILLAGE for currently available data on record or furnished by other consultants. Data request may include, but is not limited to:

- Demand Studies
- Past Evaluations
- Regulatory Compliance submittals and documents
- Land use and Environmental designations
- Development Orders
- Customer Service calls and data
- Frequency, severity and duration of Sanitary Sewer Overflows (SSOs)
- Water consumption information
- Building department records
- Previous Water and Sewer Hydraulic Models (per latest RER-DERM Calibration in 2024)
- Billing information
- Water meter data
- SCADA information
- Existing computer models of the collection system
- Private-side sewer system data
- O&M Data
- Lidar Survey models and data
- Surveys
- GIS Data
- Other data, as applicable and available

Deliverables:

- Request for Information (RFI)

2.2 – Field Data Collection and Condition Assessments

The CONSULTANT will perform limited condition assessments and provide a condition grading based on findings, as follows:

Water Assets

- Valve and hydrant location, condition, and operational status
- Visual identification of suspected material type (where visible or marked)
- Pressure and flow observations (selected four (4) hydrants for fire flow) - record pressure data over a 36-hour interval. The data will be evaluated in conjunction with consumption and system demands in other tasks as well as incorporated into the relevant models.
- Tagging and GPS coordinates collection for hydrants, valves, meters

Sewer Assets

- GPS Location of Force Main Valves
- Re-inspection of limited number of previously rehabilitated manholes to assess continued performance of liners installed

Pump Station Assessments (4 Stations)

- Field visits to assess:
  - Structural integrity, equipment condition, emergency backup provisions
  - SCADA connectivity, electrical panels, wet well conditions
  - Operational parameters (run times, starts, flows if available)

Deliverables:

- Pump Station Condition Assessment Reports
- Pressure Log Summary
- Updated valve inventory

2.3 – Updated GIS Utility Network and Spatial Data Integration

Due to the limited availability of historical as-builts and record drawings, the CONSULTANT will develop an updated best-available utility base map using a combination of existing GIS records, limited field-based verification, and operational data review to generate an actionable inventory with condition ratings, confidence levels, and prioritization inputs.

Where installation years or material types are unknown, estimates will be developed based on parcel age, utility permit trends, and field evidence. Asset data will include confidence ratings. This hybrid approach will inform a risk-based prioritization for capital improvements and support integration with the VILLAGE's ongoing Stormwater Master Plan implementation.

Deliverables:

- Spatially referenced water and sewer networks with attributes (diameter, material, condition, etc., for Sewer Collection System these will be integrated with CCTV data and PACP scoring)
- Updated GIS Data to include determination of pipe depth estimates for water and sewer mains, as well as all manhole locations and inverts for the sewer system.
- Attribute Tables with Confidence Ratings: Fields include material, install year (if known), condition, and data source, with confidence levels
- GIS Map Books/Atlases: Thematic system maps (e.g., by pipe material, diameter, condition) in PDF format
- Gap Analysis Summary: Identification of missing data, unknown assets, and recommendations for future verification
- Stormwater Coordination Layer: GIS overlay of sewer/water assets with SMP phasing and coordination flags
- ArcGIS Online Web Map: Interactive viewer for internal staff, showing asset data, condition, related data

Task 3 – Water System Assessment

The VILLAGE's water distribution system includes water mains, fire hydrants, valves, service lines, meter assemblies and meters. The VILLAGE does not own or operate any backflow preventers, but there is a network of backflow preventers as required only for commercial and multifamily properties. While no lead and copper has been identified within the VILLAGE through previous discovery efforts, most mains are composed of cast iron, ductile iron, or PVC. Some portions are of unknown composition, as their materials have not been confirmed through as-built documentation or excavation.

This effort will review and update current water system characteristic. A demand analysis will be conducted to evaluate present requirements for volume and flow. A hydraulic model will be

developed using data collected from Task 2, and multiple scenarios will be analyzed to gain insight into both existing conditions and proposed enhancements. Non-revenue water will be assessed to determine justification of losses and potential causes. Lastly, the water system assessment will review existing metering practices and make recommendations for advanced metering infrastructure (AMI) upgrades.

The sub-tasks below outline the proposed water system assessment.

3.1 – Summary of Water System Assets and Operating Characteristics

Based on Findings in Task 2, CONSULTANT will review the updated GIS data, field observations, AMI records, and operational inputs to develop a comprehensive summary of the VILLAGE's potable water system. This task will characterize the physical layout, infrastructure components, interconnect points with MDWASD, and system functionality based on known or inferred attributes. Where historical records are lacking, CONSULTANT will supplement with inferred values based on development era, parcel data, and visible field indicators. This summary will serve as the foundation for hydraulic modeling and system evaluation tasks.

Deliverables:

- Narrative summary of water system layout and operating characteristics
- Tabular inventory of pipes, hydrants, valves, meters (with known or inferred diameters, materials, lengths)
- Map showing the layout of the water system with labeled asset features
- Pressure zone or system subarea delineation (if applicable)
- Description of known operational issues or pressure constraints

3.2 – Demand Analysis

The CONSULTANT will evaluate historical water consumption trends and analyze seasonal and peak usage profiles across the VILLAGE. Specifically, this review will include an assessment of historical demand data and identification of usage patterns during high-demand periods. An assessment of fire flow capacity and compliance with fire protection requirements will be made to understand current volume deficits. The analysis will be performed by service area that are concurrent with zoning districts. Additionally, the CONSULTANT will develop future demand projections based on anticipated population growth and planned developments.

Also, the CONSULTANT will work with the VILLAGE Planner to obtain future projected population and density growth and use the data obtained to project future water demands and stresses on the current system.

Deliverables:

- Baseline Water Demand Summary (Average Day, Maximum Day, Peak Hour)
- Projected Future Demand Tables by time horizon and land use category
- Fire Flow Demand Matrix
- Assumptions Memo summarizing population projections, per capita/unit demand factors, and growth phasing
- Input Table for Hydraulic Model Calibration (for Task 3.3)

3.3 – Water Transmission & Distribution Hydraulic Modeling

The CONSULTANT will perform a hydraulic modeling analysis of the existing water distribution

system to evaluate system performance under various demand conditions. Specifically, the model will incorporate current system infrastructure, fire flow requirements, peak demand scenarios, and pressure zone performance. Additionally, the CONSULTANT will use the model to simulate future system conditions. The models will expose and anticipate system deficiencies and optimization opportunities. Model summaries will be incorporated into the WSMP.

The CONSULTANT will update and calibrate the VILLAGE's existing hydraulic model to be integrated with the GIS utility network developed under Task 2.3. The model will be used to simulate existing and future water demand conditions, evaluate pressure and flow performance, and identify system deficiencies such as dead-ends, undersized mains, or areas with inadequate fire flow.
The hydraulic model will be structured using available GIS data, pipe and node attributes, AMI demand data (where available), and SCADA or pressure log data to simulate system behavior.

CONSULTANT will allocate existing and projected demands from Task 3.2 across the model network using spatial demand allocation techniques. Model calibration will be performed based on available pressure data, hydrant flow test results, or pressure loggers placed at key locations.

Once calibrated, the model will be used to:

- Simulate existing (baseline) system performance under average day, maximum day, and peak hour demand conditions
- Evaluate pressure zones, identify low-pressure or high-pressure areas
- Simulate fire flow adequacy per ISO/NFPA criteria under worst-case demand
- Assess system performance under future projected demand conditions
- Identify system improvements (looping, upsizing, valve adjustments) to address deficiencies

The modeling results will feed directly into the Capital Improvement Plan (Task 6) and serve as a defensible tool for planning and development review.

Deliverables:

- Hydraulic Model data file
- Hydraulic Model Summary Report
- Fire Flow Simulation Results identifying any locations failing to meet required fire flows
- Future Condition Simulation Scenarios aligned with projected demand growth (0–5, 5–15, and 15–25 year horizons)
- List of Recommended System Improvements with capacity justification
- Technical Memo summarizing assumptions, model calibration approach, input data sources, and results interpretation

3.4 – Non-Revenue Water & AMI Review

The CONSULTANT will review VILLAGE data and analyze for water loss within the system. The water loss analysis will interpret water loss through systematic error and physical loss through unmetered sources. The review will quantify percentage loss from various sources. The CONSULTANT will perform a desktop study of meters deployed, review date of install and create a phasing plan for meter replacement. Finally, the CONSULTANT will review current metering capabilities and make recommendations for upgrades to AMI systems that are compatible with the VILLAGE infrastructure. A full meter inventory will be performed along with a phasing plan for new meters and Opinion of Probable Cost. Lastly, the CONSULTANT will review water meter assemblies within the VILLAGE and DRAFT details for meter assemblies and meter boxes.

Deliverables:

- Water Loss Report
- Metering Recommendation Plan
- Meter Assembly and Meter Box Detail

Task 4 – Sewer System Assessment

The VILLAGE sewer conveyance and transmission system consists of a series of gravity mains, force mains, laterals, manholes, and lift stations that operate in conjunction to serve all the property plats within the VILLAGE. All wastewater is transmitted via force mains that interconnect with the regional sewer system owned by Miami-Dade County. All VILLAGE wastewater is treated at a Miami-Dade County facility.

Most of the gravity mains within the VILLAGE are made of clay pipe, with substantial rehabilitation having been performed over the years. This rehabilitation has primarily aimed to combat inflow and infiltration (I&I). Additionally, while some lift stations within the VILLAGE have been recently rehabilitated or newly constructed, others require attention due to their topographic location, aging infrastructure, obsolete technology, and vulnerability to I&I.

This sewer system assessment will include the following as part of the WSMP:

- Review wastewater regulatory compliance requirements and provide master planning criteria
- Perform a capacity and flow analysis of the wastewater system
- Provide an updated I&I assessment
- Conduct a comprehensive condition and asset evaluation assessment

4.1 – Summary of Sewer System Assets and Operating Characteristics

The CONSULTANT will compile and summarize the physical and operational characteristics of the VILLAGE's wastewater collection system using GIS data, I&I and historical CCTV findings onward, and pump station operational records. The task includes characterizing gravity mains, manholes, force mains, and VILLAGE-owned pump stations. CONSULTANT will analyze SCADA trends, runtime data, and historical defect reports to describe flow patterns, known bottlenecks, and infiltration-prone areas. This task will inform capacity analysis and CIP prioritization in subsequent phases

Deliverables:

- Narrative summary of sewer system configuration and operation
- Tabular inventory of gravity mains, manholes, and pump stations
- Pump station summaries with basic operational parameters and observations
- Condition summary derived from existing CCTV and I&I reports
- Updated map of sewer system layout showing infrastructure and service areas

4.2 – Capacity and Flow Analysis

The CONSULTANT will perform a dry and wet weather flow analysis to determine the impacts of seasonal and tidal water influences onto the wastewater system and develop a baseline current system capacity based on current operating conditions. Furthermore, the CONSULTANT will measure how the system handles peak flows during weather conditions and make an assessment for areas prone to sanitary sewer overflows (SSO's). Rain Induced I&I will be reviewed as well. Additionally, the CONSULTANT will review current and design pump station capacity and make projections for future load capacities that may be required.

Key elements of the capacity analysis will include:

- Estimation of average daily and peak dry weather flows using SCADA pump run-time data, historical metering records, and MDC Schedule of Daily Rated Gallonage
- Evaluation of wet weather performance by analyzing SCADA trends during storm events, incorporating pump station inflow spikes, run time anomalies, and rainfall data.
- Calculation of RDI/I volumes and peaking factors, by comparing baseline DWF to observed WWF during monitored rainfall events.
- Identification of SSO-prone areas, past overflow locations, and pipeline segments or basins at risk of hydraulic surcharge.
- Evaluation of pump station capacity versus peak flow inputs, including wet well detention time, pump run time capacity, and cycle frequency.

The results of this task will inform the sewer hydraulic model (Task 4.3) and support the development of I/I reduction strategies and capital improvements (Task 6), particularly in areas with known high peaking, capacity constraints, or overlapping stormwater impacts.

Deliverables:

- Dry Weather Flow (DWF) and Wet Weather Flow (WWF) hydrographs by basin and pump station
- Available Sewer Capacity Summary for new development (by basin or service area)

4.3 – Sewer Collection & Transmission System Hydraulic Model

The CONSULTANT will update the VILLAGE's existing sewer hydraulic model in order to analyze the existing sewer collection under various demand conditions. Specifically, the model will incorporate current system infrastructure, peak demand scenarios, I/I and RDI/I impacts.

The model will be used to:

- Simulate flow conditions using Dry Weather Flow (DWF) and Wet Weather Flow (WWF) scenarios
- Estimate surcharge levels and identify capacity bottlenecks in gravity mains
- Evaluate system response during peak flow conditions (e.g., back-to-back storm events)
- Validate pump station performance, wet well cycling, and force main hydraulics
- Assess the impact of additional flow contributions from future development or redevelopment
- Support SSO risk mapping and I/I prioritization

Deliverables:

- Calibrated Sewer Hydraulic Model
- Dry and Wet Weather Simulation Results, including pipe capacity, flow velocities, and surcharge depth
- Future Development Scenario Simulations, showing system response to added flows
- Technical Memo summarizing model assumptions, calibration approach, validation process, and findings

Task 4.4 – SCADA and Asset Management System Review

The CONSULTANT will review the current asset management, SCADA remote access systems and current technology use to make recommendations on how to upgrade and optimize the utility for the benefit of the VILLAGE. This task will explore SCADA system coverage and capabilities assessments; expansion of meter technology and integration with other infrastructure needs such

as regulatory compliance reporting and water use justifications; systems integration with GIS; risk-based prioritization of existing technologies; and lastly, sustainability and resilience considerations that will improve the overall system.

The CONSULTANT will review SCADA information from those pump stations with capabilities and analyze flow trends to interpret how the system is operation, influences of Inflow and Infiltration and track pump times for regulatory purposes to determine capacity conditions for the stations. Additionally, the CONSULTANT will review the current asset management system and make recommendations to improve. The CONSULTANT will review the VILLAGE's existing work order management system and if applicable propose an improved asset management system process.

Deliverables:

- SCADA Review Findings Summary
- Asset Management System Review Recommendation Summary

Task 5 – Future Growth, Regulatory, Environmental, and Resiliency Planning

The CONSULTANT will evaluate future growth scenarios and their impact on the Village's water and sewer infrastructure by reviewing population projections, planned developments, zoning, and redevelopment trends. This analysis will be conducted in coordination with the Village's Planning and Zoning Department and will assess the adequacy of existing systems to support growth through 2050.

The analysis will include the development of spatially distributed future water and wastewater demands, and will identify system upgrades needed to accommodate projected increases in flow and pressure/fire protection needs. CONSULTANT will also develop a standardized evaluation framework to assess the capacity impacts of new development or redevelopment proposals. This framework will serve as a practical tool for VILLAGE staff during development review and infrastructure planning.

In addition, CONSULTANT will conduct a review of current and emerging regulatory, environmental, and resiliency factors that may affect system planning. This includes evaluating the implications of climate change (e.g., sea level rise, saltwater intrusion), regulatory mandates (e.g., Lead and Copper Rule Revisions, FDOH standards, consent orders), and infrastructure material resiliency. These considerations will be integrated into long-term capital planning and decision-making to guide the Village toward regulatory compliance and system resilience.

Deliverables:

- Projected Water and Sewer Demand Tables (by time horizon and zoning/development type)
- Flow Allocation & Evaluation Tool to support utility availability & allocation decisions
- Summary of Regulatory and Environmental Risk Factors (combined water and sewer)
- Recommendations for Long-Term Infrastructure Adaptation and Resilience

Task 6 – Capital Improvement Plan

CONSULTANT will develop a phased and risk-informed Capital Improvement Plan (CIP) for water and sewer infrastructure upgrades, expansions, and rehabilitations. The CIP will reflect the

findings from previous tasks, including system condition, capacity limitations, fire flow deficiencies, I/I contributors, regulatory compliance needs, and future development-driven demands.

Task 6 includes:

- **Prioritization of Projects Based on Multi-Criteria Analysis**, including:
  - Asset condition and risk of failure
  - Capacity limitations (existing and projected)
  - Regulatory and environmental drivers
  - Community and operational impact
  - Coordination with other infrastructure programs (e.g., stormwater and roadway projects)

- **Evaluation of Project Alternatives**, including:
  - Rehabilitation vs. Replacement options based on lifecycle costs and condition
  - Phased vs. Full-System Upgrades, considering staging, operational continuity, and funding capacity
  - Cost-Benefit and Disruption Minimization Analysis

- **Development of a CIP Project Bank**, categorizing improvements by:
  - Project type (e.g., CIPP lining, upsizing, valve zone optimization, pump upgrades)
  - Priority tier (High, Medium, Low)
  - Implementation timeframe:
    - Short-Term (0–5 years)
    - Mid-Term (5–15 years)
    - Long-Term (15–25 years)

- **Planning-Level Cost Estimates**, using unit cost data from recent projects or regional cost curves (with allowances for inflation and contingency)

- **Coordinate CIP Phasing** with:
  - Stormwater Master Plan implementation
  - Known or planned roadway projects (State and Village)
  - Available or anticipated grant/funding cycles

- **Develop an Implementation Strategy** aligned with Village budgeting processes and funding pursuits (e.g., SRF, FEMA, BIL, FDEP Resiliency)

Deliverables:

- CIP Project Bank (Excel and PDF) with project descriptions, timing, prioritization, and cost
- Phased CIP Summary Tables by planning horizon (0–5, 5–15, 15–25 years)
- Project Summaries (for high-priority projects)
- Opinion of Probable Cost (OPC) for each proposed improvement
- CIP Implementation Schedule (Gantt-style or tabular)

Task 7– Operation and Maintenance (O&M) Recommendations

The CONSULTANT will review current Operation and Maintenance practices being used by the VILLAGE and create efficient processes for the VILLAGE to follow in order to meet O&M needs

as well as regulatory requirements.

Deliverables:

- Water Valve Exercise Plan and Schedule
- Force Main Air Release Valve Maintenance Standard Operation Procedure
- Fire Hydrant Flushing and Exercise Plan

Task 8 – Implementation, Phasing, and Final WSMP Deliverables

CONSULTANT will outline a high-level strategy for how the Village can implement the WSMP over time, including:

- Suggested implementation frameworks and project staging logistics
- Funding alignment strategies (e.g., SRF, FEMA, FDEP, Miami-Dade grants)
- Key milestones and triggers for initiating phases (e.g., development applications, asset condition thresholds, compliance deadlines)
- Recommendations for long-term monitoring of system performance, I&I improvements, regulatory compliance, and asset condition

The WSMP phasing plan will be synchronized with the implementation of the Stormwater Master Plan, to:

- Minimize community disruption and redundant construction
- Prioritize corridors where multiple infrastructure improvements overlap
- Support integrated design and permitting schedules
- Provide a basis for coordinated grant/funding applications

The CONSULTANT will prepare and submit the following:

- Draft WSMP for internal review and stakeholder feedback
- Revised WSMP based on comments from Village staff, WASD (if applicable), and stakeholders
- Final WSMP including all figures, appendices, and digital submittals

Deliverables:

- WSMP Implementation Strategy Memo
- Draft WSMP (Full Report: PDF + Word)
- Final WSMP (Incorporating comments)
- Appendices: GIS data, hydraulic models, cost tables, project bank, etc.

Task 9 – Water and Sewer Rate Study (Rev 01)

Raftelis (SUBCONSULTANT) will provide Rate Study Services. These services include assisting the VILLAGE with review, verifying, and reconciling the financial dataset to be used to develop a Water and Sewer Rate Study. Please refer to Exhibit B: *Proposal to Provide Utility Consulting Services – Fiscal Year 2026 Water and Wastewater Revenue Sufficiency Study*.

Deliverables:

- Initial Data Request
- Financial Forecast with Capital Funding Plan
- Draft and Final Technical Memorandum
- Draft and Final Briefing Document or PPT

Task 10 – Review of FDOT Design Submittals (Time and Material, NTE) (Rev 01)

The CONSULTANT will provide on-going, time and material not-to-exceed, services associated with FDOT Project 449007-2-32-01 and the VILLAGE. These tasks include, but are not limited to, the following:

FDOT Design Review

CONSULTANT will perform reviews on an as-needed basis, of FDOT design plans at major design milestones (60%, 90%, 100%, addenda, and as-builts), as authorized by the VILLAGE.

- Review of roadway, bridge, drainage, MOT, pavement and signing markings, utility, and other applicable design disciplines for impacts to Village utilities, as authorized by the Village
- Prepare review comments and recommendations
- Track comment resolution through subsequent design submittals

Utility Coordination Support

CONSULTANT shall assist the VILLAGE on an as-needed basis, and tasks will be requested via email from the VILLAGE before CONSULTANT performs work related to this task. Services anticipated to be completed under this subtask include, but are not limited to the following, as authorized by the VILLAGE:

- Serve as the Village's engineering representative during VILLAGE utility coordination efforts
- Coordinate with FDOT, utility owners, and/or design consultants regarding VILLAGE utility conflicts and proposed resolutions
- Attend project meetings with FDOT (virtual and/or in-person, as authorized by the VILLAGE)
- Review FDOT responses to VILLAGE comments and assist in resolving outstanding issues
- Prepare technical correspondence and supporting documentation as requested by the Village
- Evaluate anticipated relocation requirements for affected VILLAGE utilities
- Review potential relocation alternatives as design progresses
- Coordinate with the VILLAGE's ongoing Water and Sewer Master Plan to identify opportunities to incorporate long-term system improvements, where appropriate
- Provide engineering recommendations regarding replacement-in-kind versus system betterments
- Evaluate impacts to existing VILLAGE water and wastewater infrastructure
- Assess impacts to existing operations, maintenance access, and system reliability
- Coordinate with FDOT regarding reimbursement procedures, utility agreements, and project delivery alternatives
- Assist in preparing supporting documentation requested by FDOT

Deliverables:

- FDOT design plan review, as authorized by the VILLAGE (Time and Material)
- Utility coordination and support, as authorized by the VILLAGE (Time and Material)

PROJECT ASSUMPTIONS

- All requested information will be made available by the VILLAGE
- Survey services will not be performed. If surveys are determined to be required during the project execution, they will be additional services and will require a scope revision.
- The VILLAGE's staff will be available to attend meetings and assist with site visits and provide access to the lift stations
- All materials & deliverables shall be submitted electronically to the VILLAGE
- No design or permitting services are included in this Scope of Work
- No surveying. Subsurface Utility Engineering services, geotechnical investigations, water sampling, are included
- The VILLAGE to provide the latest water and sewer calibrated models (performed by previous VILLAGE Consultant)
- The scope of work is limited to water distribution and sewer collection/conveyance infrastructure owned and/or maintained by North Bay Village within the municipal boundaries of North Bay Village and within the municipal boundaries of the City of Miami (specifically on Pelican Island)
- CONSULTANT will coordinate with the Village and relevant agencies (e.g., WASD) to obtain available data and plans; no responsibility is assumed for data accuracy from external sources
- The Village will designate a single point of contact to coordinate feedback and schedule meetings
- Field visits, meetings, and deliverables are based on the estimated number of hours provided; additional services may require scope and fee amendments
- Deliverables will be provided in both digital PDF and editable formats (e.g., Word, Excel, GIS, model files)
- CONSULTANT will compile and integrate all available CCTV and SCADA data into the GIS environment; no new CCTV is included
- GIS layers will be updated based on available data and reasonable assumptions where data is incomplete or absent (e.g., pipe installation year, material)
- No new smoke testing, dye testing, or other testing is included in this scope
- The VILLAGE will conduct submittal reviews and provide comments within five (5) working days of submittal
- The VILLAGE will request assistance from CONSULTANT as it relates to Task 10 via written correspondence (email)
- In consideration of this task authorization, access to data and information sources is made available to the CONSULTANT. The CONSULTANT shall comply fully with all security procedures and shall not divulge to third parties all confidential data information obtained from the VILLAGE while performing consulting engineering work, including, but not limited to, security procedures, business operations information or proprietary information in the possession of the VILLAGE. The CONSULTANT shall not be required to keep confidential information or material that is publicly available through no fault of the CONSULTANT, material that the CONSULTANT developed independently without relying on the state's or customer's confidential information, or material that is otherwise obtainable under state law as a public record

ADDITIONAL SERVICES

If authorized in writing by the VILLAGE, as an amendment to this Work Order, the CONSULTANT shall furnish, or obtain, Additional Services of the types listed in the AGREEMENT. The VILLAGE, as indicated in the AGREEMENT, will pay for these services.

PERFORMANCE SCHEDULE

The CONSULTANT shall perform the services identified in Tasks 1 – 10 within 365 days of the written Notice to Proceed.

PROJECT FUNDING

Performance of this project is at the VILLAGE's discretion and may be contingent upon the VILLAGE receiving funding and work shall not begin until the VILLAGE provides a Notice to Proceed to CONSULTANT.

METHOD OF COMPENSATION

The services performed will be accomplished using the Lump Sum method of compensation. Task 10 is proposed to be accomplished as a time and material (T&M) not-to-exceed (NTE) task per the VILLAGE needs and request. ODC Reimbursables for reproduction & reimbursable materials shall be billed to the VILLAGE as a passthrough cost and invoices will include receipts of these costs. The total hourly rates payable by the VILLAGE for each of CONSULTANT's employee categories, reimbursable expenses, if any, and sub-consultant fees, if any, are shown on **Exhibit A** attached hereto and made a part hereof. Pay application requests shall be prepared on the VILLAGE's approved pay application request form. The CONSULTANT shall submit the pay application request to the VILLAGE's Project Manager for review and approval. Pay application requests shall be submitted monthly.

TERMS OF COMPENSATION

Services will be provided for the following Lump Sum amounts:

Task 1	Project Management and Coordination Meetings	$53,574.00
Task 1.1	Coordination Meetings and QAQC – Water and Sewer Rate Study (Rev 01)	$10,020.00
Task 2	Existing Conditions and Baseline Analysis	$123,340.00
Task 3	Water System Assessment	$114,260.00
Task 4	Sewer System Assessment	$111,740.00
Task 5	Future Growth, Regulatory, Environmental, and Resiliency Planning	$ 23,300.00
Task 6	Capital Improvement Plan (CIP)	$32,720.00
Task 7	Operation and Maintenance (O&M) Recommendations	$20,060.00
Task 8	Implementation, Phasing, and Final WSMP Deliverables	$24,640.00
Task 9	Water and Sewer Rate Study (Rev 01)	$38,500.00
Task 10	Review of FDOT Design Submittals (Time and Materials, NTE) (Rev 01)	$40,130.00 (T&M)
	Sub-Total (Original Scope)	**$502,634.00**
	ODC Reimbursables	**$500.00**
	Sub-Total – Lump Sum (Rev-1)	**$48,520.00**
	Sub-Total – Time and Material (Rev-1)	**$40,130.00**
	Grand Total (Rev-1)	**$591,784.00**

VILLAGE CONTACTS

Requests for payments should be directed to North Bay Village Accounts Payable via e-mail to Pwdocuments@nbvillage.com after getting approval from the VILLAGE's Project Manager. All other correspondence and submittals should be directed to the attention of Roger Hogg, Capital Improvements Director, at the address shown below. **Please be sure that all correspondence refers to the VILLAGE project number and title as stated above.**

Steven Buckland
Director of Public Works
Public Works
North Bay Village
Village Hall, Suite 208
1666 Kennedy Causeway
North Bay Village, FL 33141 (305)
756-7171 ext. 66
sbuckland@nbvillage.com

Roger Hogg
Capital Improvements Director
Public Works
North Bay Village
Village Hall, Suite 608
1666 Kennedy Causeway
North Bay Village, FL 33141
(305) 756-7171
RHogg@nbvillage.com

CONSULTANT CONTACTS

Consultant POC

Paola Davalos, PE
Ardurra Group, Inc
1000 NW 57th Ct, Suite 800
Miami, FL 33126
padavalos@ardurra.com
786-873-5200

SIGNATURE PAGE
NORTH BAY VILLAGE

IN WITNESS OF THE FOREGOING, the parties have set their hands and seals the day and year first written above.

By: Steven P Buckland
Mr. Steven Buckland
Public Works Director

This Work Order approved pursuant to [check one and initial]:
☒ SPB Manager Purchasing Authority (§36.25 Village Code)
☐ ____ Resolution No. __ _____

By: _____
Frank Rollason
Village Manager

Attest:

By: _____
Alba L. Chang, CMC
Village Clerk

Approved as to form and legal sufficiency:

By: _____
Weiss Serota Helfman Cole & Bierman, P.L.
Village Attorney

SIGNATURE PAGE
CONSULTANT/CONTRACTOR

WITNESSES:

_____

_____
[Witness print/type name]

_____

_____
[Witness print/type name]

(CORPORATE SEAL)

ARDURRA GROUP, INC

_____

_____
[Print Name, check title]

☐ President ☐ Vice President
☐ Authorized Signatory (Please provide corporate authorization)

ATTEST:

_____
Secretary

_____
[Print Name]

Exhibit A – Work Break Down Fee Schedule

North Bay Village

RFQ 2023-005 - Work Order No. 08

Water and Sewer Master Plan

PROPOSED FEE SCHEDULE

Appendix A

ARDURRA

Task		Rate, $/Hr	Budget: Labor	Budget: Subtotal
1	**Project Management and Coordination Meetings**		$53,574.00	$53,574.00
	Kick-off Meeting		$3,364.00	
	Coordination Meetings (6)		$10,090.00	
	Meeting with Miami Dade WASD (2)		$4,210.00	
	Stakeholder Workshop		$5,250.00	
	Community Engagement Meeting		$5,250.00	
	Presentation to Village Council		$4,290.00	
	Program Management		$21,120.00	
2	**Existing Conditions and Baseline Analysis**		$123,340.00	$123,340.00
	2.1 Data Collection and Analysis		$29,460.00	
	2.2 Field Data Collection and Condition Assessments		$60,600.00	
	2.3 GIS Utility Network Development and Spatial Data Integration		$33,280.00	
3	**Water System Assessment**		$114,260.00	$114,260.00
	3.1 Summary of Water System Assets and Operating Characteristics		$27,100.00	
	3.2 Demand Analysis		$35,540.00	
	3.3 Water Transmission and Distribution Hydraulic Modeling		$33,460.00	
	3.4 Non-Revenue Water and AMI Review		$18,160.00	
4	**Sewer System Assessment**		$111,740.00	$111,740.00
	4.1 Summary of Sewer System Assets and Operation Characteristics		$31,980.00	
	4.2 Capacity and Flow Analysis		$24,190.00	
	4.3 Sewer Collection & Transmission System Hydraulic Model		$37,450.00	
	4.4 SCADA and Asset Management System Evaluation		$18,120.00	
5	**Future Growth, Regulatory, Environmental, and Resiliency Planning**		$22,300.00	$22,300.00
	Future Growth, Regulatory, Environmental, and Resiliency Planning		$22,300.00	
6	**Capital Improvement Plan**		$32,720.00	$32,720.00
	Capital Improvement Plan		$32,720.00	
7	**Operation and Maintenance (O&M) Recommendations**		$20,060.00	$20,060.00
	Operation and Maintenance (O&M) Recommendations		$20,060.00	
8	**Implementation, Phasing, and Final WSMP Deliverables**		$24,640.00	$24,640.00
	Implementation, Phasing, and Final WSMP Deliverables		$24,640.00	
	Sub-Total Labor Fee		**$502,634.00**	**$502,634.00**
	ODC's (Mileage, Reproduction & Reimbursable) (See Appendix B)			**$0.00**
	Sub-Total Labor Fee/ODC			**$502,634.00**
	Total Project Cost (Labor/ODC)			**$502,634.00**
	% Utilization			
	Total ($)			**$502,634.00**

* Labor Multiplier 3.0

North Bay Village
RFQ 3023-008 - Work Order No. 08
Water and Sewer Master Plan
PROPOSED FEE SCHEDULE
Appendix A
Rev 01

ARDURRA

Task	Principal Engineer	Project Manager	PEC Communication Manager	Senior Project Engineer	Designer	GIS Specialist	Project Engineer	Clerical/Admin	Total Hours	Budget: Labor	Budget: Subtotal	Budget: Task Total	Remarks
Rate, $/Hr	$280.00	$285.00	$200.00	$214.00	$196.00	$127.00	$160.00	$85.00					
1 Project Management and Coordination Meetings	30	75	40	24	0	2	54	50	166	$$$ 852.00	$$$ 852.00		
Kick-off Meeting	4	4	4	4	0	2	8	4	30	$5,364.00			
Coordination Meetings - 6	6	12	6	6	0	6	24	2	62	$12,780.00			
Meeting with Biscayne Bay Commission	0	4	4	4	0	0	12	2	26	$4,412.00			
Stakeholder Workshop	0	8	16	4	0	0	4	2	34	$5,204.00			
Community Engagement Meeting	0	8	16	4	0	0	4	2	34	$5,204.00			
Presentation to Village Council	0	8	4	0	0	0	4	2	18	$4,396.00			
Program Management	16	30	0	0	0	0	0	40	150	$21,120.00			
1.1 Project Management and Coordination Meetings - Water & Sewer Rate Study	8	12	8	8	8	8	32	6	90	$15,036.00	$15,036.00		
Project Management and Coordination Meetings - Water & Sewer Rate Study	8	12	8	8	8	8	32	6	90	$15,036.00			
2 Existing Conditions and Baseline Analysis	9	30	0	56	160	300	160	46	810	$124,540.00	$124,540.00		
2.1 Data Collection and Analysis	1	20	0	12	40	0	40	20	133	$20,360.00			
2.2 Water Data Collection and Condition Assessment	1	10	0	32	80	40	80	26	409	$62,380.00			
2.3 GIS Utility Network Development and Spatial Data Integration	1	0	0	12	40	160	0	0	213	$32,380.00			
3 Water System Assessment	4	58	0	80	196	240	116	0	732	$114,280.00	$114,280.00		
3.1 Estimate of Water System Supply and Operating Characteristics	4	20	0	16	40	80	14	0	174	$26,000.00			
3.2 Demand Analysis	0	10	0	12	32	140	20	0	244	$33,540.00			
3.3 Water Transmission and Distribution Hydraulic Modeling	0	8	0	16	124	0	80	0	328	$33,460.00			
3.4 Non-Revenue Water and AMI Review	0	12	0	16	60	0	22	0	138	$19,140.00			
4 Sewer System Assessment	4	40	0	64	400	40	196	8	760	$111,740.00	$111,740.00		
4.1 SURFACE (Sewer System Assets and Operation Characteristics)	0	12	0	20	80	40	40	0	300	$37,460.00			
4.2 Capacity and I&I Analysis	0	10	0	16	80	0	40	0	146	$20,780.00			
4.3 Sewer Collection & Transmission System Hydraulic Model	0	10	0	28	240	0	72	0	350	$37,460.00			
4.4 FDEP and Asset Management System Evaluation	4	8	0	0	0	0	44	8	104	$16,040.00			
5 Future Growth, Regulatory, Environmental, and Resiliency Planning	8	30	0	32	24	0	32	0	116	$20,280.00	$20,280.00		
Future Growth, Regulatory, Environmental and Resiliency Planning	8	30	0	32	24	0	32	0	116	$20,280.00			
6 Capital Improvement Plan	4	52	16	24	28	0	60	0	184	$27,720.00	$27,720.00		
Capital Improvement Plan	4	52	16	24	28	0	60	0	184	$27,720.00			
7 Operation and Maintenance (O&M) Recommendations	4	12	0	32	20	0	0	8	108	$20,960.00	$20,960.00		
Operation and Maintenance (O&M) Recommendations	4	12	0	32	20	0	0	8	108	$20,960.00			
8 Implementation, Phasing, and Final WMP Deliverables	4	8	16	8	120	0	0	8	164	$24,640.00	$24,640.00		
Implementation, Phasing, and Final WMP Deliverables	4	8	16	8	120	0	0	8	164	$24,640.00			
											$39,900.00		Long Term - See Article 11
											$39,900.00		
10 Review of FDOT Design Submittals	8	20	0	16	136	0	0	20	208	$40,120.00	$40,120.00		Time and Materials (NTE)
Review of FDOT Design Submittals	8	20	0	16	136	0	0	20	208	$40,120.00			
Sub-Total Labor Fee	$14,000.00	$67,995.00	$14,400.00	$22,800.00	$187,140.00	$61,214.00	$113,600.00	$7,905.00		$802,054.00	$802,054.00		
Misc. Expenses (Reproduction & Reimbursable)											$500.00		
Sub-Total Labor Fee (Long Term) (Rev 01)	$780.00	$21,420.00	$0.00	$1,980.00	$19,320.00	$0.00	$6,080.00	$1,400.00		$18,000.00	$47,700.00		
Sub-Total Labor Fee (T&M) (Rev 01)	$1,680.00	$19,905.00	$0.00	$2,760.00	$16,800.00	$0.00	$6,080.00	$1,960.00		$42,130.00	$42,130.00		
Total Project Cost (Lump Sum) (Rev 01)											$891,784.00		

Jan Gallardo 1/2

Exhibit B – Water and Sewer Rate Study
Raftelis (SUBCONSULTANT)

ATTACHMENT A

RAFTELIS

July 17, 2026

Mr. Hector Gomez
Senior Manager
Ardurra
1000 NW 57th Court, Suite 800
Miami, FL 33126

Subject: **Proposal to Provide Utility Consulting Services – Fiscal Year 2026 Water and Wastewater Revenue Sufficiency Study**

Dear Mr. Gomez:

Raftelis Financial Consultants, Inc. ("Raftelis") is pleased to submit this proposal to provide sub-consulting services to Ardurra ("Ardurra") to provide utility rate and financial consulting services (the "Proposal") to the North Bay Village (the "Village") with respect to the preparation of a water and wastewater revenue sufficiency study (the "Project"). Based on our discussions and understanding, the Project would consist of preparing a minimum of an eleven-year financial forecast to evaluate the current near-term and longer-term fiscal position of the water and wastewater utility system (the "System"), evaluation of the utility's customer billing and usage characteristics, development of a financing plan to fund the capital improvement program and support the issuance of new debt, fund the projected expenditure requirements identified for the System, and the evaluation of the overall sufficiency of the rate revenues to meet the Village objectives. The key objective of the study is to determine a long-term fiscally sustainable financial plan to assist the Village in its long-range strategic planning initiatives.

With respect to the performance of Project, Raftelis will rely on the Village and Ardurra as the Village's consulting engineers for the System to provide or evaluate the capital improvement needs of the System or any changes to the cost of operations that may occur as a result of the implementation of the capital improvements, increased regulations, or other factors.

Based on our discussions and our understanding of the Project, Raftelis proposes the following:

Project Team and Billing Rates

With respect to the performance of this engagement, Mr. Thierry Boveri will be a technical advisor for the project and Mr. Joe Williams will serve as the project manager for the project and both will serve as the primary contacts with Ardurra and the Village. Other financial analysts and administrative personnel for the firm may be utilized during the course of the engagement as needed. Please see Attachment A for a summary of the personnel by title and billing rates for Raftelis staff that may be utilized during this engagement which is made part of this Proposal.

Scope of Services

The scope of services to be performed by Raftelis is included in Attachment B, which is made a part of this Proposal. To the extent that Ardurra, on behalf of the Village, request the performance of additional services, such services will be determined based on the scope of the additional services being requested, the estimated level of effort, and the rates assumed in Attachment A.

Compensation and Billing

Based on the scope of services as summarized in Attachment B, we propose establishing a lump sum budget to perform the Project on behalf of the Village in the amount of **$38,500**. This contract budget includes the direct cost of personnel anticipated to be assigned to conduct the various tasks of the Project by Raftelis as well as an allowance for other direct costs such as travel, telephone, delivery charges, and subconsulting expenses, if any.

It is proposed that Raftelis would bill monthly for services based on a percent of completion tied to the deliverables as outlined in the scope of services pursuant to Attachment B.

Project Schedule

Based on our understanding of the needs of the Village, it is estimated that the Project will be initiated on or about August 1, 2026. Recognizing this Project start date and upon notification to proceed as provided by Ardurra and the Village which shall encompass an executed subconsulting agreement between Raftelis and Ardurra, Raftelis anticipates substantial completion of the study within 120 days. The completion of the analysis would be subject to the availability of information provided to Raftelis from the Village and Ardurra that would be necessary to conduct the rate analysis and the ultimate implementation requirements of the Village.

Disclosure

As a registered Municipal Advisor under the Dodd-Frank Act, Raftelis is required to inform our clients of any existing or potential conflicts of interest that may be relevant to any proposed scope of services that may include providing "advice" as that term is defined in the Dodd-Frank Act. As of the date of this engagement letter, no conflicts of interest are known to exist.

Under the Dodd-Frank Act the definition of "advice" includes providing any opinion, information or assumptions related to the size, timing and terms of possible future debt issues or borrowing. This type of information may be integrated into the capital and financial planning components of a rate model update. This definition is applicable regardless of whether this information is developed and used solely for planning and decision-making purposes. For the services addressed in the scope of work identified for this engagement, any information that is developed by Raftelis that falls under this definition of municipal advice is not intended to represent a recommendation that the Village should issue debt based on the terms and assumptions used to develop the financial plan or forecast, or that the Village will, in fact, be able to issue debt under the exact terms and conditions assumed and used to develop the financial plan or forecast. The information developed as part

of this rate model update, including any related municipal advice, is intended only to provide information useful in evaluating the potential impact on the utility and future rate adjustments of one potential course of action for the Village. If the Village decides at some future date to issue debt, then at that time the Village will need to engage an independent, registered Financial Advisor to assist in evaluating the availability of different types of debt, and the specific terms and conditions for issuing debt, which will be affected by market conditions and the Village's credit rating at the time of issuance, and the timing of any debt or loan issuance. At that time, RFC can also provide additional assistance to the Village and its Financial Advisor related to a specific bond or debt issue, such as preparing a bond financial disclosure report or financial forecast for inclusion in bond offering or loan documents, without requiring additional oversight or supervision by the Financial Advisor.

By signing this engagement letter indicating its approval and acceptance of the proposed scope of work and fees, the Village is also explicitly acknowledging that Raftelis has provided the necessary disclosures addressing conflicts of interest and any limitations on the scope of Municipal Advisory services to be provided by Raftelis as part of this engagement.

The Municipal Securities Rulemaking Board ("MSRB") provides significant protections for municipal entities and obligated persons that are clients of a municipal advisor. To understand the protections provided and how to file a complaint with an appropriate regulatory authority, visit the MSRB web site at www.msrb.org.

We appreciate the opportunity to submit this Proposal to Ardurra to provide utility rate and financial consulting services on behalf of the Village. If this Proposal, including the cost estimate and Scope of Services, are acceptable to both the Village and Ardurra, please provide an agreement between Ardurra and Raftelis documenting the terms and conditions for providing the utility and financial consulting services to the Village as identified in this Proposal. As previously mentioned, the executed agreement will serve as our notice to proceed on the Project for the Village which also assumes that the Village has accepted the terms and conditions of our Proposal.

Thank you for including Raftelis as part of the Ardurra team and we look forward to working with Ardurra and Village in the near future on the Project.

Very truly yours,
RAFTELIS FINANCIAL CONSULTANTS, INC.

Thierry Boveri
Senior Vice President

Attachments

ATTACHMENT A

NORTH BAY VILLAGE, FLORIDA
FISCAL YEAR 2026 WATER AND WASTEWATER REVENUE SUFFICIENCY STUDY

SCHEDULE OF DIRECT LABOR HOURLY RATES AND STANDARD COST RATES for ADDITIONAL SERVICES - AS NEEDED

DIRECT HOURLY LABOR RATES

Project Team Title	Direct Labor Hourly Rates
Senior Vice President	$390
Vice President	$370
Senior Manager	$330
Recruiter	$310
Principal / Senior Advisor	$310
Manager	$285
Senior Consultant	$255
Consultant	$230
Associate Consultant	$175
Graphic Designer	$170
Analyst	$125
Administration	$100

STANDARD COST RATES

Expense Description	Standard Rates
Mileage Allowance – Personal Car Use Only	IRS Standard Mileage Rate
Reproduction (Black and White) (In house)	$0.05 per Page
Reproduction (Color) (In house)	$0.25 per Page
Reproduction (Contracted)	Actual Cost
Computer Time	$0.00 per Hour
Telephone Charges	Actual Cost
Delivery Charges	Actual Cost
Lodging / Other Travel Costs	Actual Cost
Meals – Not to exceed per Raftelis Employee	$10.00 – Breakfast $15.00 – Lunch $30.00 – Dinner
Subconsultant Services	Actual Cost plus 5.0%
Other Costs for Services Rendered	Actual Cost

ATTACHMENT A

ATTACHMENT B

NORTH BAY VILLAGE, FLORIDA
FISCAL YEAR 2026 WATER AND WASTEWATER REVENUE SUFFICIENCY STUDY

SCOPE OF SERVICES

The following is a summary of the scope of services and corresponding tasks to be performed by Raftelis Financial Consultants, Inc. (Raftelis) in development and completion of the Fiscal Year 2026 Water and Wastewater Revenue Sufficiency Analysis (the "Project"). The Project will encompass the development of a revenue sufficiency analysis which will evaluate the ability of water and wastewater system (the "System") revenues to meet the expenditure and funding requirements identified for the System. The evaluation will encompass an eleven fiscal year period which includes the current budget year (Fiscal Year 2026) and the subsequent ten (10) fiscal years ending 2036 (collectively, the "Forecast Period"). The following tasks shall be performed during this phase of the Project:

Task 1 – Kickoff and Data Acquisition / Compilation Review: A detailed data request will be prepared for the Village and its consulting engineers to compile specific information relative to the operation of the System, including, but not limited to, customer billing and sales statistics, the adopted Fiscal Year 2026 and Fiscal Year 2027 operating budget, the latest cost estimates for the multi-year capital improvement program, fund (cash) balances, utility rate ordinances / resolutions, water production and purchased wastewater treatment data, wholesale service and other System agreements, ordinances and policies, debt repayment schedules and corresponding loan documents, and other similar information.

Task 2 – Customer Statistics Compilation and Billing Frequency Analysis: Based on data provided by the Village, Raftelis will prepare a trend analysis of the water and wastewater customers and sales / billed flow for up to three (3) years ended September 30, 2025 (defined as the "Historical Period"); subject to data availability (must be in an Excel electronic format). Raftelis will also prepare a trend analysis for the same period for finished water production and purchased wastewater treatment requirements. The purpose of this trend analysis is to analyze anticipated service area needs, changes in the overall capacity needs of the respective System facilities, and to reconcile the customers served and the associated demands of such customers to the rate revenues received for service.

Included in the historical compilation of the customer statistics will be the development of a detailed billing frequency analysis for the Fiscal Year 2025 to identify billed water sales, and wastewater billed flow, to identify water use / sales by water consumption block / rate attribute (for metered water customers) or the determination of System rate revenues to be derived from existing [adopted] and recommended rates. Accordingly, Raftelis will work with the Village to obtain utility billing data on a "per account" basis to develop a billing frequency analysis to identify water use per consumption block. Raftelis does recognize that the residential class is billed on a quarterly basis and the commercial class is billed on a monthly basis. Raftelis will test the billing data by performing a reconciliation analysis to the reported revenues for validation and reliability; the billing and rate relationships will

form the basis for the development of the utility service rate revenue forecast (Task No. 3). The information required to perform this task will need to be produced by the Village from data contained within its Utility Billing System. The information to be provided by the Village must be in an excel format which reconciles to the utility revenues billed for water and wastewater service. Information will include, but not be limited to, the following customer attributes:

- Account number, customer name, and service address;
- Customer class designation;
- Location of customer (inside or outside the Village);
- Meter size serving customer premise or indication that premise is not metered;
- Billed water consumption per billing period (quarterly for residential and monthly for commercial customer classes) where metering is employed;
- Billed Sewer Flow based on metered water consumption;
- Water Rate Revenue Billings (from monthly user rates); or
- Sewer Rate Revenue Billings (from monthly user rates).

Task 3 – Development of Customer Usage Forecast: Based on customer statistical information provided for the Historical Period and the billing frequency analysis, and discussions with Village staff, Raftelis will develop a customer and sales forecast for the individual water and wastewater utility systems for the Forecast Period. The forecast will be developed for each individual water and wastewater utility system and will be prepared on an individual class basis consistent with the existing billing parameters and based on data availability.

Task 4 – Development of Revenue Projections from Existing Rates: This task involves the development of a projection of utility rate revenues for the Forecast Period from existing rates recognizing: i) the results of the customer and sales forecast performed in Task 3; and ii) the Village's existing rates for service. Additionally, this task will involve a rate-revenue "reasonableness" test (reconcile model results to reported amounts on Village financial statements) to ensure that the revenue model and billing determinants are reasonable relative to the modeling process. This task will also involve the projection of other operating revenues, interest income earned on unrestricted fund balances as maintained by the Village for the System and revenues derived from other utility transactions (e.g., customer service charges).

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Task 5 – Development of Operating Expense Projections: This task involves the development of the estimated amount of operating expenses required to be funded from water and wastewater rates for the Forecast Period. This task will be performed in sufficient detail to: i) recognize the primary expenses incurred by the individual utility systems; ii) assist in the projection of expenditures for the applicable forecast period; iii) recognize changes in operating costs due to changes in regulatory requirements, utility operations and the implementation of the capital improvement program; and iv) have sufficient detail in operating expenses to properly allocate the costs among the utility systems as well as the rate structure attributes. The projection of Operating Expenses will be based on recent historical trends and changes in cost of providing service, estimates provided by the Village and Ardurra as it relates to ongoing operations, wholesale service charges and costs by the Villages treatment provider, Miami-Dade County, and changes in operation due to new regulations or the implementation of the capital improvement plan, and the recognition of inflationary allowances for the general cost of operations. The operating expense analysis will be performed to identify the net revenue margins of the utility that are critical in meeting the debt compliance requirements of the System as well as identification of fund availability for repayment of existing and any future debt and capital funding (primarily associated with re-investment into the System for renewals and replacements). Finally, other operating expenses such as inter-fund transfers, administrative allocations, contingency reserves, insurance needs, and other expenses will be evaluated to ensure that rates are designed for the full recovery of costs.

Task 6 – Capital Improvement and Funding Analysis: This task involves a detailed review of the Village's ten-year or applicable capital improvement program and engineering planning documents prepared by Ardurra or other engineers regarding the condition of and overall needs of the System and the performance of a funding analysis to identify available sources of funds for financing of the capital improvement program and the estimated impact on utility rate revenues associated with the capital funding program for the Forecast Period. This task will include identification of the issuance of new debt necessary to fully fund the capital needs of the system.

Task 7 – Projected Debt Service: This task involves accounting for existing and projecting debt service requirements for the forecast period. Such as, the existing Drinking Water and Clean Water State Revolving Fund (SRF) loans as administered by the Florida Department of Environmental Protection. Proposed debt will be determined based on the proposed rate plan and capital funding needs of the system in order to evaluate different financing strategies for funding the capital plan.

Task 7 – Other Revenue Requirement Identification: To meet the financial obligations of the Village System, Raftelis will review the financial aspects and position from a credit perspective in order to potentially recognize other revenue requirements that may need to be allocated or included in the rate analysis. This task will include assistance in the development of fiscal policies in terms of working capital maintenance, the funding of capital or maintenance reserves, debt coverage and debt limit targets, and the recognition of any other transfer requirements that may be associated with the System.

Task 8 – Compliance Analysis: This task will be conducted to satisfy the rate covenant requirements and the flow of fund requirements as defined in the loan documents secured through the SRF loan program, or loans that may be secured in the future from other financial institutions. The compliance

analyses will be performed each year of the Forecast Period to maintain the financial integrity of the System. As part of this task, Raftelis will develop a "management dashboard" to allow for the review of the financial position of the utility and the ability to perform sensitivity analyses in order to finalize the financial forecast. Raftelis will work with the Village to identify or update any fiscal policies and financial performance targets that will provide guidelines and support for the financial forecast and revenue sufficiency fiscal policies necessary to address the need for goals related to financial performance indicators, such as debt service coverage ratios and reserve fund levels which the Village may deem necessary.

Task 9 – Development of Net Revenue Requirements and Rate Impact Analyses: Based on the aforementioned tasks, Raftelis will prepare a summary of the total net revenue requirements of the individual and combined water and wastewater systems and the accompanying average utility system rate impact requirements for each fiscal year of the Forecast Period. Tasks 3 through 8 assumes the attendance of one (1) virtual off-site meetings to review cost allocations, assumptions, study progress, and to develop strategies with the Village staff and its consulting engineers.

Task 10 – Design of Proposed Rates: Based on the billing frequency analysis attributes, the identified cost of providing service, and discussions with the Village, Raftelis will prepare up to two (2) rate design options for the Village's consideration based on the Fiscal Year 2027 net revenue requirements. The scope assumes maintaining the existing customer class designations and the general rate structure currently in effect; any modifications will be based on cost recovery relationships (e.g., increased base charge for flat rate water bills, increased water conservation pricing, etc.).

Task 11 – Documentation of Net Revenue Requirements Analysis: Raftelis will prepare a draft and final technical memorandum or report documenting all of our analyses, assumptions, and considerations of the Project for review by Village staff.

Task 12 – Presentation to Village Council: Raftelis will attend one on-site meeting with the Village Council to present the results of the Fiscal Year 2027 water and wastewater revenue sufficiency rate study. Raftelis will prepare a power point presentation documenting the analyses, findings, and recommendations for the Project for presentation to the Village Council.

Meetings

During the course of the Project, it is anticipated that Raftelis will attend a total of one (1) on-site public hearing to present the results of the revenue sufficiency study to the Village Council. During the course of the engagement Raftelis may participate in no more than three (3) virtual meetings as needed to present and discuss assumptions or findings.

Deliverables

The deliverables contemplated for the engagement will include: Initial Data Request, Financial Forecast with Capital Funding Plan, Draft and Final Technical Memorandum, and Draft and Final Briefing Document or PPT.

Village Staff Assistance

As with any major study performed for a public utility, the staff will be called upon assist Raftelis to complete the engagement on a timely basis. The following is a list of the activities anticipated to be performed by the staff of the Village:

1. The gathering of specific customer, operational and financial data and information associated with the Project;
2. The performance of certain analyses relative to the compiling of data if not in a usable format in general records and reports of the Village;
3. Assisting in the formulation of policy decisions relative to expenditures to be included in the rate evaluation and the allocation of costs to the individual utility systems. An example would be the prioritization of capital improvement projects;
4. Assisting in public relations program, scheduling of the Village Council meetings, and communication of the "political" aspects of the Project;
5. Performing a general review and providing comments relative to the results of our analyses and reports to the Village; and
6. Assistance by the Village's legal counsel and Village staff to codify any revisions to the utility rate resolution based on the recommended study results.

Additional Services

During the study, the Village may request that Ardurra provide additional services relative to the performance of the rate evaluation which would result in the performance of additional services by Raftelis. Such services will not be conducted until authorized by both the Village and Ardurra as mutually agreed between the parties. Regarding additional services that would be billed by Raftelis, all invoices for additional services will be based on the hourly rate schedule of Raftelis members as identified in this Proposal. Although no additional services are anticipated for this engagement, examples of additional services may include the following:

1. Attendance of meetings with Village staff, Village committees or interested parties, or public hearings with the Village Council in addition to what is contemplated in the scope of services.
2. The derivation of rate design alternatives which are not contemplated in the scope of services.
3. Services required to extend the financial forecast beyond a ten-year planning period.
4. Review and design of other existing or new ancillary or miscellaneous service charges.
5. Delays in the Project schedule, which may have impacts on analyses performed, and which would affect the budget for the scope of services reflected herein.

To the extent additional services are performed by Raftelis for this Project but the total cost of the study, including the additional services, does not exceed the allocable Raftelis cost budget for the study, no additional services will be billed to the Village.

Deliverables

The following deliverables shall be provided to the Village during the term of the Project:

- Information Request in support of data compilation activities;
- Revenue Sufficiency Report or technical memorandum documenting analyses for the Project; and
- Presentation Documents for presentation of findings and report recommendations to Village Council.

(Remainder of page intentionally left blank)

Isaac Librun

From: Steven Buckland
Sent: Wednesday, September 23, 2026 3:57 PM
To: Isaac Librun; Jane Feary
Cc: Accounts Payable; Annabelle Rodriguez; Mayte Gamiotea; Sandra Siefken
Subject: RE: [ALERT External Email] North Bay Village/WO8 - Revision Proposal

Per Sandra this is being done by a budget amendment. She has prepared that, but I do not know the status.

Steven P Buckland
Public Works Director, North Bay Village
Cell: 954-214-8530

From: Isaac Librun <ILibrun@nbvillage.com>
Sent: Wednesday, September 23, 2026 3:51 PM
To: Jane Feary <pwdocuments@nbvillage.com>; Steven Buckland <SBuckland@nbvillage.com>
Cc: Accounts Payable <ap@nbvillage.com>; Annabelle Rodriguez <arodriguez@nbvillage.com>; Mayte Gamiotea <MGamiotea@nbvillage.com>; Sandra Siefken <SSiefken@nbvillage.com>
Subject: RE: [ALERT External Email] North Bay Village/WO8 - Revision Proposal

Hi Jane and Steven,

Thank you for sharing the details regarding the revisions to purchase order 9113. Currently, there are no funds available in this GL, so a budget adjustment (BA) must be completed before these new lines can be added to the purchase order. Please let me know if you need help with this process or if anything needs clarification.

Let me know how you'd like to proceed so we can move forward promptly.

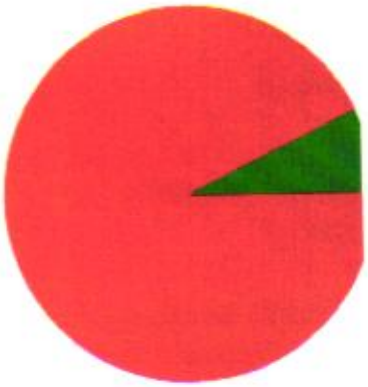
430-30-533-3110 Fisca

Engineering & Plannning 10/1 2025 - 9/30/2026

- Summary
- General
- Segmentation
- Report Groups
- Notes
- Authorization
- Budget
  - Summary
  - Detail
  - Period Distributions
  - Adjustments
  - Budget Notes
- History
  - Detail
  - Period Activity
  - Fiscals
  - Journal Entries
  - Encumbrances
  - Reserves
- Documents

Budget Summary

Original Budget	40,000.00
Adjustments	525,894.00
Current Budget	565,894.00
Activity	365,246.25
Encumbrances	159,849.00
Reserves	0.00
Budget Remaining	40,798.75
Pending	0.00
Budget Available	40,798.75



Budget Remaining	40,798.75	Percent Ren
Budget Used	525,095.25	Percent Use

From: Jane Feary <pwdocuments@nbvillage.com>
Sent: Wednesday, September 23, 2026 3:27 PM
To: Isaac Librun <ILibrun@nbvillage.com>
Subject: FW: [ALERT External Email] North Bay Village/WO8 - Revision Proposal
Importance: High

Please lines to the purchase order 9113 as follows:

- Line 9: Coordination Meetings - Water and Sewer Rate Study $10,020.00
- Line 10: Water and Sewer Rate Study $38,500.00
- Line 11: Review of FDOT Design (T&M) $40,130.00
- Line 12: Reimbursables $500

Thank you.

From: Steven Buckland <SBuckland@nbvillage.com>
Sent: Wednesday, September 23, 2026 3:14 PM
To: Jane Feary <pwdocuments@nbvillage.com>
Cc: Nicholas J. Fernandez, PE <njfernandez@300eng.com>; Isaac Librun <ILibrun@nbvillage.com>
Subject: FW: [ALERT External Email] North Bay Village/WO8 - Revision Proposal

Jane, the attached revised WO 8 with Ardurra was approved by commission last week, please add these lines to the current PO 009113.

- Coordination Meetings - Water and Sewer Rate Study $10,020.00
- Water and Sewer Rate Study $38,500.00
- Review of FDOT Design (T&M) $40,130.00
- Reimbursables $500

Steven P Buckland
Public Works Director, North Bay Village
Cell: 954-214-8530